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PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION

Improvements in or relating to Bedsteads

We, WHITFIELDS BEDSTEADS LIMITED, a Company organised under the Laws of Great Britain and Northern Ireland, and CHRISTOPHER GILBERT WHITFIELD, and 5 ENOCH ADAMS, both British Subjects, all of 109—125, Watery Lane, Birmingham, 9, do hereby declare the nature of this invention to be as follows:—

This invention relates to bedsteads of 10 the type which are supported at one or both ends alternatively on feet which prevent any accidental displacement of the bedstead or on one or more castors or wheels which enable the bedstead to be 15 pushed about from place to place.

According to the present invention the said feet are fixed in position on the bedstead frame and each of the said castors or wheels is mounted on a vertical post 20 which can be moved longitudinally relatively to the bedstead frame by mechanism coupled by means of gearing to a shaft provided with a handle, or to which a handle may be attached. Alternatively 25 if desired the said castors or wheels may be secured to the bedstead frame and the said feet may be provided on the vertical posts.

The gearing may be of the worm and 30 worm wheel type, the worm being formed on the shaft which carries the handle and the worm wheel being provided with a pivot on which is mounted a connecting rod which moves up and down on the rotation of the worm wheel, the connecting rod being also attached to the movable post. The shaft which carries the handle 35 is preferably horizontal: the handle will then tend to assume its lowest position 40 when at rest, in which position it is out of the way and does not interfere with the normal bed making operations.

In one form of bedstead made according 45 to the present invention the two pillars of the bedstead at the head of the bedstead are provided with castors and the two pillars at the foot of the bedstead are provided with fixed feet. Approximately centrally within the rectangle 50 formed by the foot-end of the bedstead is formed a metal housing for mechanism which raises or lowers a castor, so that the foot-end of the bedstead rests alter-

natively on the fixed feet or on the wheel of the castor. The housing is in the form 55 of a flat metal box and is supported by a vertical tube extending above and below it: this tube is attached at its upper end to the bedstead bow and is supported near its lower end by means of two horizontal bars which are welded both to the said supporting tube and to the pillars of the bedstead 60 foot-end. The castor is attached to a vertical post in such a manner as to permit rotation of the castor round the post without longitudinal movement thereon. The post on which the castor is mounted passes up within the lower part of the said supporting tube 65 into the housing itself, the supporting tube thus forming a sleeve for the post. A cranked connecting rod is pivoted at its lower end to the top of the post carrying the castor and at its upper end to a worm wheel which meshes with a horizontal worm formed on a rod which extends through the casing and is provided with a handle. The rod carrying the worm is 70 rotatably mounted in the housing but is incapable of longitudinal movement 75 therein. The worm wheel is arranged to rotate through 90° or rather more, the radius of the worm wheel which passes through the upper end of the connecting rod being at an angle of about 20° below the horizontal in its lower position, and about vertical in its upper position. The 80 inoperative part of the worm wheel is cut away in order to save space and to allow the upper end of the post carrying the castor to reach a higher position than would otherwise be possible. A fixed pivot pin for the worm and wheel is provided in the housing.

If desired the foot-end of the bed can 85 be provided with two castors one each side of the centre of the bed, each attached to its own vertical post which is movable longitudinally in the manner explained above. In this case the two worm wheels 100 can be rotated by two worms formed on the same rod, one handle thus sufficing to raise or lower both the castors.

Alternatively the vertical post attached to the lower-end of the connecting rod in 105 the above mechanism may be welded on to

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a horizontal cross bar which carries the upper ends of the two posts carrying the castors.

The construction described above whether for one castor or for two castors is comparatively simple to construct and allows the bed to be raised on the castors or lowered on the fixed feet with minimum of effort and without jolting the person in the bed. Moreover by mounting

the handle so as to be rotatable round a horizontal axis the handle tends normally to rest in its lowest position in which position it is out of the way, and does not interfere with the normal bed making 15 operation.

Dated this 23rd day of June, 1938.
MEWBURN, ELLIS & Co.,
70 & 72, Chancery Lane, London, W.C.2.
Chartered Patent Agents.

COMPLETE SPECIFICATION

Improvements in or relating to Bedsteads

We, WHITFIELDS BEDSTEADS LIMITED, a Company organised under the laws of Great Britain and Northern Ireland, and CHRISTOPHER GILBERT WHITFIELD, and EINOCH ADAMS, both British Subjects, all of 109—125, Watery Lane, Birmingham, 9, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:

This invention relates to bedsteads of the kind which are supported alternatively on feet which prevent any accidental displacement of the bedstead or on one or more castors or wheels which enable the bedstead to be pushed about from place to place, operating means being provided for bringing the said castors or feet into or out of contact with the floor.

According to the present invention, the operating mechanism comprises a worm 40 adapted to engage a toothed member which is operated by the said worm and one or more connecting links through which the motion of the toothed member is communicated to the said castors or 45 feet. Preferably the said feet are fixed in position on the bedstead pillars and each of the said castors or wheels is mounted on a vertical post, which can be moved longitudinally relatively to the 50 bedstead end by the aforesaid operating mechanism having a shaft provided with a handle, or to which a handle may be attached. Alternatively if desired the 55 said castors or wheels may be secured to the bedstead frame and the said feet may be provided on the vertical posts.

The worm is preferably formed on the shaft which carries the handle and the toothed member is a worm wheel provided with a pivot on which is mounted one or more links which move up and down on the rotation of the worm wheel, the link or links being also attached to the movable post. The shaft which carries 65 the handle is preferably horizontal; the

handle will then tend to assume its lowest position when at rest, in which position it is out of the way and does not interfere with the normal bed-making operations.

One form of bedstead made according 70 to the present invention is illustrated in the accompanying drawings wherein

Fig. 1 is a sectional side elevation of the operating mechanism showing the post in the raised position.

Fig. 2 is a similar view to Fig. 1 showing the post in the lowered position;

Fig. 3 is a sectional rear view of the mechanism shown in Fig. 2;

Fig. 4 is a perspective view of the end 80 of the bedstead with the mechanism incorporated therein.

Referring to the drawings the two pillars of the bedstead at the head of the bedstead not shown are provided with 85 castors and the two pillars 1 at the foot of the bedstead are provided with fixed feet 2. Approximately centrally within the rectangle formed by the foot-end of the bedstead is formed a metal casing 3 for 90 the mechanism which raises or lowers a castor 4, so that the foot-end of the bedstead rests alternatively on the fixed feet 2 or on the wheel of the castor 4. The casing 3 is in the form of a flat metal box 95 and is supported by a vertical tube 5 extending above and below it; this tube is attached at its upper end to the bedstead bow 6 and is supported near its lower end by means of two horizontal bars 100 7 which are chill-cast both to the said supporting tube and to the pillars 1 of the bedstead foot-end. The castor 4 is attached to a vertical post 8 in such a manner as to permit rotation of the castor 105 round the post without longitudinal movement thereon. The post 8 on which the castor is mounted passes up within the lower part of the said supporting tube 5 into the casing 3, the supporting tube 5 thus forming a sleeve for the post. A pair of cranked connecting links 9 are pivoted at their lower ends to the top of the post 8 and at their upper ends to a

toothed wheel 10 which meshes with a horizontal worm 11 formed on a rod 12 which extends through the casing and is provided with a handle 14. The rod 12 carrying the worm is rotatably mounted in the casing 3 but is incapable of longitudinal movement therein. The toothed wheel 10 is arranged to rotate through 90° or rather more, the radius of the toothed wheel 10 which passes through the upper end of the connecting rod being at an angle of about 20° below the horizontal in its lower position, and about vertical in its upper position. The in-operative part of the toothed wheel is cut away in order to save space and to allow the upper end of the post 8 carrying the castor to reach a higher position than would otherwise be possible. A fixed pivot pin 15 for the toothed wheel 10 is provided in the casing 3.

If desired the foot-end of the bed can be provided with two castors one each side of the centre of the bed, each attached to its own vertical post which is movable longitudinally in the manner explained above. In this case the two toothed wheels can be rotated by two worms formed on the same rod, one handle thus sufficing to raise or lower both the castors.

Alternatively the vertical post attached to the lower end of the connecting link in the above mechanism may be welded on to a horizontal cross bar which carries the upper ends of the two uprights working in guides, a castor being provided at the lower end of each upright.

The construction described above whether for one castor or for two castors is comparatively simple to construct and allows the bed to be raised on the castors or lowered on the fixed feet with minimum effort and without jolting the patient in the bed. Moreover by mounting the handle so as to be rotatable round a horizontal axis the handle tends normally to rest in its lowest position in which position it is out of the way, and does not interfere with the normal bed making operation.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A bedstead of the kind described

wherein the operating mechanism comprises a worm adapted to engage a toothed member which is operated by the said worm and one or more connecting links through which the motion of the toothed member is communicated to the said castors or feet.

2. A bedstead according to claim 1 wherein the worm is arranged on a horizontal shaft, and the toothed member comprises a portion of a toothed wheel, mounted for rotation on a horizontal axis.

3. A bedstead according to claim 1 or 2 wherein the said feet are carried by the bedstead pillars, and each of the said castors is mounted on a post capable of vertical movement relatively to the said pillars.

4. A bedstead according to any of the preceding claims wherein the toothed member has the form of a worm-wheel that is cut away to a sector in such manner that the upper pivot of the post can rise to a position within the pitch-circle of the said worm-wheel.

5. A bedstead according to claim 3 wherein a single movable castor is provided, and the vertical post on which said castor is mounted is directly connected to the toothed member by a pair of links, the upper end of each link being connected to the toothed member and the lower end to the top of the said vertical post.

6. A bedstead according to any of the preceding claims wherein a single post, actuated by a single worm and worm-wheel, actuates a horizontal cross-bar which carries at its ends two uprights that extend downwardly and carry each a castor at its lower end.

7. A bedstead according to any one of the preceding claims wherein the operating mechanism is enclosed in a casing, the said casing being located in vertical alignment with the post.

8. A bedstead constructed, arranged and adapted for use substantially as described with reference to the accompanying drawings.

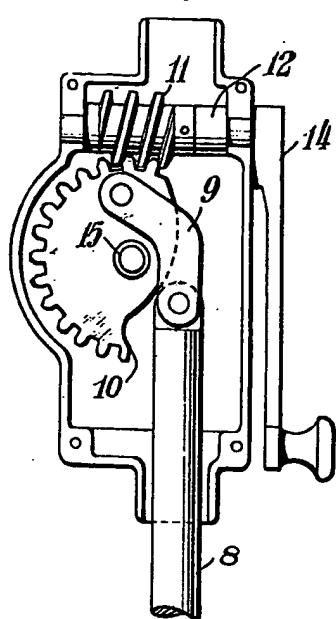
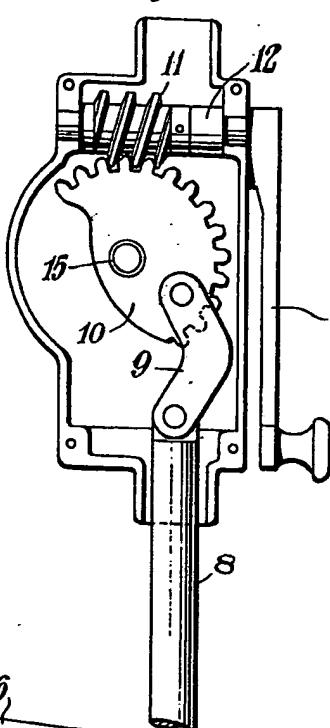
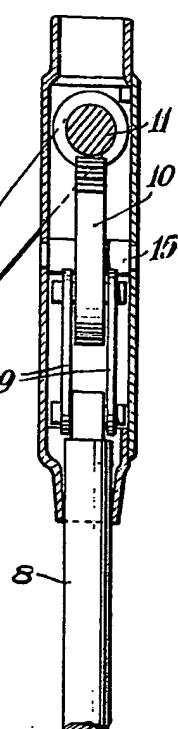
Dated this 23rd day of June, 1939.

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Chartered Patent Agents.

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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.*Fig. 2.**Fig. 3.**Fig. 4.*